

News Briefs	2	New JPL Portal	4
Special Events Calendar	2	Passings, Letters	4
NASA Honor Awards	2	Retirees, Classifieds	4
Redrawing the Lines for Parking . . .	3		

Lab confirms Earth orbit of Apollo rocket stage

By Guy Webster

Object escaped from Earth orbit in 1971

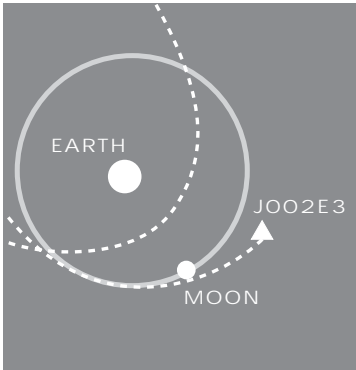
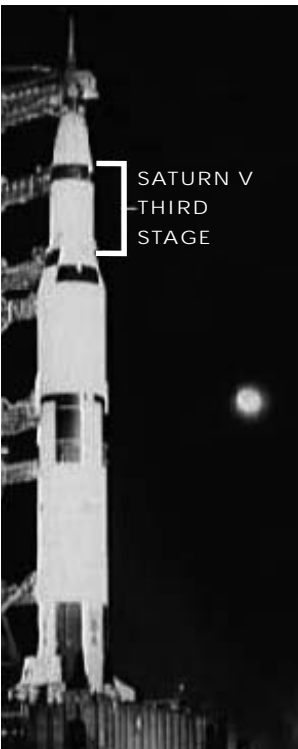
JPL scientists have confirmed the first known capture of an object into Earth orbit from a Sun-centered orbit, thanks to continuing observations of what is most likely the long-lost third stage of a 1969 rocket to the moon.

“(Two weeks ago) we didn’t know for sure that it had been captured, and now there’s no doubt that it was captured in April of this year,” said Dr. Paul Chodas of the Near-Earth Object Program Office at JPL. “What’s more, we are virtually certain that it originally escaped Earth orbit in March 1971 and that it will escape again next June. It’s only a temporary visitor.”

The object, named J002E3, was discovered Sept. 3 by Canadian amateur astronomer Bill Yeung, observing from El Centro, Calif. Increasingly precise orbital calculations made possible from a second week of positional observations have nearly ruled out any chance the object will hit the moon or enter Earth’s atmosphere before it departs Earth orbit, Chodas said. Calculations made about a week after the discovery left higher impact possibilities, but now the chances of impact are less than 1 percent at either the moon or Earth, and a third week of observations will likely push the odds to zero. The object is too small to be considered hazardous, in any case.

More than 100 measurements of the object’s position have now been reported from more than a dozen amateur astronomers, said JPL’s Dr. Steven Chesley. The two weeks of movement tracked by those observations make up about a sixth of one orbit around Earth. Scientists can extrapolate the object’s path for years into the future and years into the past from that short arc. “The observations coming in are from a loosely organized network of dedicated amateur observers. Their data have been vital in determining this object’s past and future paths,” Chesley said.

The object escaped from Earth orbit in March 1971, Chodas said. That fits its most likely identity as the third stage of the Saturn rocket that took Apollo 12 astronauts to the moon in November 1969. The 18-meter-long (60-foot-long) third stage was last seen in an elongated 43-day orbit around Earth, not much different from J002E3’s current orbit. It probably completed nine or 10 Earth orbits, then swung far



enough toward the Sun to be pulled into a Sun-centered orbit, he said. The transition happened through a special “portal” located at the L1 Lagrangian point, where the gravitational pulls of the Sun and Earth are approximately equal.

Analysis by researchers from the University of Arizona and the Massachusetts Institute of

Technology suggests that J002E3’s surface is white paint rather than more asteroid-like material. If it is not from the Apollo 12 rocket, some less likely possibilities are one of the four 7-meter-long (22-foot-long) panels that enclosed lunar modules from six Apollo missions or rocket stages from Soviet or U.S. unmanned lunar missions. Those are less likely because they seem too small to match the object’s observed brightness, and they are not known to have been left in orbits that could have escaped Earth. Additional observations in coming weeks may pin down the identification.

After J002E3 escaped Earth’s gravity in 1971, it raced Earth in circles around the Sun, but it had an inner lane, so it completed 33 solar orbits in the time it took Earth to complete 31. In 1986, the object lapped Earth on the inside, too far away to be snagged by Earth’s gravity. This year, it was about to lap Earth again but passed too close to the L1 portal and Earth captured it.

The transition between Earth-centered dynamics and Sun-centered dynamics has been understood theoretically for years and has been used for designing orbits of some spacecraft, but this is the first time a capture into Earth orbit has been confirmed, Chodas said. Comet Shoemaker-Levy 9, which struck Jupiter in 1994, made this kind of transition into Jupiter’s orbit several decades earlier. JPL’s Genesis spacecraft, currently collecting samples of solar-wind material near the L1 point, will use a similar maneuver for a low-energy return to Earth with the samples in 2004.

Earth won’t have seen the last of J002E3 when this peripatetic bit of space junk escapes after its sixth orbit in mid-2003. It will shift from solar orbit to Earth orbit again in decades ahead. “This type of orbit can’t last very long,” Chodas said. “That’s one reason it would be very unlikely to find an asteroid with an orbit like this.” Within several thousand years, the object will likely end its travels by hitting the moon or Earth. That is not cause for concern, though. Five rocket stages like the Apollo 12 third stage were crashed into the moon intentionally as part of seismic research, and several others harmlessly disintegrated when they re-entered Earth’s atmosphere.

Images of J002E3’s calculated path are available at <http://neo.jpl.nasa.gov>.

NASA advisory group meets on Lab



Photo by Dutch Slager / JPL Photolab

During their Sept. 10–11 visit to JPL, members of the NASA Advisory Council gather for a close-up look at the Mars Exploration Rovers, being readied in the Spacecraft Assembly Facility for next year’s flight. The council, which provides the NASA administrator with advice on NASA programs and issues, meets four times each year and has met every four or five years at JPL, the last time being in 1998. Most of the council’s agenda during their Lab visit concerned International Space Station research maximization and prioritization. Members also received an overview of JPL activities and the Mars Program in particular, including a briefing on the Mars Student Imaging Project, a science education program funded by NASA and JPL, and operated by Arizona State University, that gives students the opportunity to study planetary geology using Mars Odyssey’s visible-light camera.

News Briefs



Dr. Charles Elachi

Elachi wins Takeda award

JPL Director DR. CHARLES ELACHI has been named one of the winners of this year's Takeda Awards for his work in developing spaceborne radar instruments to monitor the global environment. The awards, established last year by the Takeda Foundation of Japan, honor individuals who demonstrate outstanding achievements in the creation and application of new engineering knowledge to benefit human needs. Elachi shares his prize for work benefiting the environment with two Japanese researchers.

As a researcher, Elachi is perhaps best known for his role in the development of a series of imaging radar systems for the space shuttle that allow scientists to penetrate clouds and even the top layers of soil in arid regions, offering scientifically fruitful hints of what lies underneath.

Elachi has participated in a number of archaeological expeditions in the Egyptian desert, the Arabian Peninsula, and the western Chinese desert in search of old trading routes and buried cities using satellite data. He has served as principal investigator on numerous NASA projects and is currently team leader of the Titan radar experiment on the Cassini mission to Saturn.

Elachi will receive half of a monetary award of 100 million yen (about U.S. \$833,000); the other half will be shared by his Japanese co-honorees. The awards will be presented at a ceremony Nov. 20 in Tokyo.

The Takeda Foundation, established in 2001 by Ikuo Takeda, founder of instrument manufacturer Advantest Corp., also announced two other awards honoring researchers working in electronics and life sciences.

Tavormina wins Women at Work honor

DR. ANN TAVORMINA, manager of the Exploration Systems Autonomy Section, has been named a winner of the 2002 Medal of Excellence Award by Women At Work, a Pasadena-based non-profit job and career resource center.

Tavormina joined JPL in 1987. Prior to her current position, she served as the Magellan mission planning team chief, Magellan deputy mission director and Flight Engineering Office manager, and Cassini mission operations manager. She has managed Section 367 since November 1999.

Her recent outreach and community services activities include speaking at the inaugural Sally Ride Science Club's Los Angeles Science Festival for girls in 6th to 8th grade at Caltech in March; lecturing on planetary exploration at JPL's Bring Your Child to Work Day in April; and participating in a live webcast for the IBM EXploring Interests in Technology and Engineering (EXITE) camp in Atlanta in July.

Businesses throughout the Los Angeles area honor women employees through the Women at Work award. At JPL, nominations are submitted by the Director's Advisory Council for Women. Out of the 16 women nominated for this award, Tavormina's nomination

was endorsed unanimously by the selection committee.

Tavormina will receive the award at a ceremony at the DoubleTree Hotel in Pasadena on Oct. 24.

Super-accurate atomic clock developed

Building upon more than a decade of work on a frequency standard called the linear ion trap, the JPL Frequency Standards Laboratory has developed and installed a new trapped ion atomic clock for the U.S. Naval Observatory in Washington, DC. Recent JPL innovations are expected to provide 20 times improved stability over previous trapped ion clocks, resulting in a clock that's effective stability is equivalent to about one minute in 10 billion years—the approximate age of the universe.

The instrument, based on mercury ions, will be measured with a large ensemble of atomic clocks operated to form a very stable, continuous time-scale at the U.S. Naval Observatory, which serves as the center of all U.S. Department of Defense timekeeping and supports the needs of the Global Positioning System. During this evaluation, the ion clock will also be used as a frequency reference for transcontinental time and frequency transfer comparisons to be performed between the Observatory and the only other ion clock of its kind, located at JPL.

Retiree group gets NASA funding

The Volunteer Professionals for Medical Advancement, a group of retired JPL engineers and scientists who have applied their technical expertise to medical research projects, has received a one-year grant from NASA's Bioastronautics Research Division.

VPMA founder and director HERMAN BANK said the \$15,000 grant will help expand the group's reach nationwide. The group will make presentations on its activities to retiree centers, various major hospitals and major medical foundations, and Bank encourages retired technologists to donate their time to form VPMA centers in their own communities.

The group has been responsible for a number of medical advancements, including preliminary design of an automated oxygen enrichment system for premature babies; solving a blood clot problem found with a stent that could cause heart attacks; and creation of an advanced-database private computer network for pediatricians.

For more information, call Bank at (626) 798-3748.

Secretaries' mentoring group to meet

The Office Professional Mentoring Group is organizing the next mentoring session for JPL secretaries. Participants can learn from others—and share their own experiences—while being supported and guided by mentors who have a wealth of experience.

Applications for the program can be found at <http://hr/officepros>. Send applications to JOY HODGES, 301-486, no later than Friday, Oct. 11. For more information, call her at ext. 4-7041.

Special Events Calendar

Ongoing Support Groups

Alcoholics Anonymous—Meetings are available. Call the Employee Assistance Program at ext. 4-3680 for time and location.

Caregivers Support Group—Meets the first Thursday of the month at noon in Building 167-111 (The Wellness Place). For more information, call the Employee Assistance Program at ext. 4-3680.

Codependents Anonymous—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319.

Gay, Lesbian and Bisexual Group—Meets the first and third Fridays of the month at noon in Building 111-117. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at 3-0664.

Working Parents Support Group—Meets the third Thursday of the month at noon in Building 167-111 (The Wellness Place). For more information, call the Employee Assistance Program at ext. 4-3680.

Friday, September 27

Investment Advice—A TIAA/CREF representative will be available for one-on-one counseling. To schedule an appointment, go online to tiaacref.com or call (877) 209-3140, ext. 2614.

Sunday, September 29

Caltech-Occidental Chamber Orchestra—A double bass concerto titled "Fables, Farewells and Flashbacks" will be performed at 8 p.m. in Caltech's Ramo Auditorium. Admission is free. For information, call (626) 395-4552.

Tuesday, October 1

Health and Safety Faire—To be held from 10 a.m. to 1:30 p.m. on the mall and in von Kármán Auditorium. More than 30 health care agencies and four insurance carriers will provide information, massage, and organic farm produce. Health screenings will include body fat, blood pressure, cholesterol, colon cancer and derma skin scan. The Occupational Safety Office will provide information on laser safety, bicycle safety, ergonomics, monitoring equipment, pre-operational safety reviews, job hazard analysis and communication, chemical hygiene, fall protection, radiation, signs, inspections, lockout/tagout, safety early reporting system, and mishaps. Inclement weather would move the event to Thursday, Oct. 3.

JPL Gamers Club—Meeting at noon in Building 301-227.

JPL Genealogy Club—Meeting at noon in Building 301-271.

Wednesday, October 2

Associated Retirees of JPL/Caltech—Meeting at 10 a.m. at the Caltech

Credit Union, 528 Foothill Blvd., La Cañada.

Thursday, October 3

JPL Gun Club—Meeting at noon in Building 183-328.

Friday, October 4

Michael Andrew and Swingerhead—This ensemble performs music reminiscent of the 1940s and '50s, featuring cha-cha, mambo, surf and lounge, and will appear at 8 p.m. at Caltech's Beckman Mall, where a dance hall will be set up. Tickets are \$15 for adults, \$5 for youth high school age and under. For information, call (626) 395-4652.

Saturday, October 5

Paris Combo—This retro-cabaret ensemble performs blues, swing, gypsy, flamenco and North African music, and will appear at 8 p.m. at Caltech's Beckman Mall, where a dance hall will be set up. Tickets are \$15 for adults, \$5 for youth high school age and under. For information, call (626) 395-4652.

Tuesday, October 8

JPL Stamp Club—Meeting at noon in Building 183-328.

Wednesday, October 9

"Countering Terrorism: The Role of Science and Technology"—Caltech chemistry professor Dr. Jack Beauchamp will lecture at 8 p.m. in Beckman Auditorium. Admission is free. For information, call (626) 395-4652.

JPL Amateur Radio Club—Meeting at noon in Building 238-543.

JPL Toastmasters Club—Meeting at 5 p.m. in the 167 conference room. Call Roger Carlson at ext. 4-2295 for information.

"The Voyager Journeys to Interstellar Space"—Voyager Project Scientist and former JPL Director Dr. Ed Stone will lecture at 8 p.m. in Caltech's Beckman Auditorium. Admission is free. For information, call (626) 395-4652.

Saturday, October 12

The Reduced Shakespeare Company—The great literary works of the world are condensed into only two hours, beginning at 8 p.m. in Caltech's Beckman Auditorium. Tickets are \$29, \$25 and \$21, youth high school age and under, \$10. For information, call (626) 395-4652.

Sunday, October 13

Chamber Music—The Takacs String Quartet will perform at 3:30 p.m. in Caltech's Beckman Auditorium. Tickets are \$29, \$25, \$21 and \$17. For information, call (626) 395-4652.

NASA bestows annual Honor Awards

JPL employees, contractors and partners were recognized by NASA for their outstanding work over the past year as the Lab held the agency's annual Honor Awards ceremony Sept. 24.

Following is a list of recipients. For more detailed information, log on to <http://techinfo.jpl.nasa.gov/jpl/awards>.

Public Service Group Achievement Award

Boeing Integrated Defense Systems, Lockheed Martin Astronautics.

Group Achievement Award

2001 Mars Odyssey Project Team, Airborne Visible and Infrared Imaging Spectrometer (AVIRIS) Team, Cassini Jupiter Flyby Team, Cassini Radio Science Ground System Development Team, Contractor Purchasing System Review Team, Deep Space 1 Beacon

Monitor Experiment Team, Deep Space 1 Comet Team, Deep Space Mission System Information Technology Security Team, Delta-DOR Implementation Team, Dynamics Simulator for Entry, Descent, and Surface Landing Team, Frequency and Timing Monitor and Control Upgrade Team, Genesis Project Team, Geographic Synthetic Aperture Radar Team, JPL Cryobot Team, JPL Project Formulation Support Team, Mars Theme Education and Public Outreach Team, Near-Earth Asteroid Tracking Team, Safe Rover Navigation Team, Space Interferometry Mission Beam Launcher Development Team, SIM System Testbed Team, Space Link Extension Development Project Team, Stardust Camera Anomaly Team, Ulysses Nutation Operations Team, Web Interface for Telescience Team.

Public Service Medal

Robert Berry.

Exceptional Scientific Achievement Medal

Gilles Peltzer, James Williams.

Exceptional Service Medal

Charles Avis, Scott Bowdan, William Breckenridge, Robert Bunker, Stanley Butman, Bradley Compton, David Crisp, Khanara Ellers, John Fleener, David Fulton, Mary Ann Gero, Roger Gibbs, Kathleen Hahn, Kathleen Hardcastle, Ralph Kahn, James McClure Jr., Susan Paradise, Donald Rapp, Ronald Reeve, Antonio Sanders, S. Terese Smith, Mike Smyth, Michael Stoloff, Eric Suggs, Padma Varanasi, John M. Walsh.

Exceptional Achievement Medal

Christoph Adami, Magdy Bareh, David

Bayard, Todd Bayer, Shyamkumar Bhaskaran, Scott Bolton, L. Alberto Cangahuala, Gregory Fleisch, Mark Gatti, Earl Hansen, Eleanor Helin, Scott Hensley, Veljko Jovanovic, Anne Kahle, Carl Kloss Jr., Nancy Leon, Lynn Lowry, Paul Maker, Farzin Manshadi, John Martonchik, Jeffrey Mellstrom, Brian Paczkowski, David Perz, Moshe Pniel, Richard Rainen, Marc Rayman, Paul Rosen, Robert Werner.

Outstanding Leadership Medal

M. Mark Colavita, Charles Elachi, Susan Kurtik, George Pace, Bobby Williams. *Note:* Dr. Elachi's award was presented at NASA Headquarters this past summer.

Correction

Images on page 1 of the Sept. 13 issue of Universe showing ice breaking off from the Pine Island Glacier in Antarctica should have been credited to the Multi-angle Imaging SpectroRadiometer (MISR) program.

NEW POLICY
SEEKS A MORE EQUITY-
BASED APPROACH

Redrawing the Lines for Parking

JPL HAS ALWAYS FACED PARKING CHALLENGES due to space limitations. An extensive review of on-Lab parking eligibility criteria was recently completed. The Executive Council examined a range of proposals and approved changes to the existing on-Lab parking policy. The new policy is driven largely by the establishment of the new Senior Career Level A designation. The changes, although significant for some, will not affect the majority of the Laboratory population. The new policy will be implemented January 6, 2003.

The parking eligibility changes represent a philosophical change from a longtime practice of not taking away on-Lab parking privileges once

Administrator IV, and most Senior A designations, will now be eligible for on-Lab parking. Currently eligible positions of Managers I, II, and III and Principal are not affected, as are employees with 25 years or more of continuous service. Current practices for carpools, vanpools and motorcycles remain the same.

A new alternative, which will take effect in 2003, will provide approximately 300 employees with on-Lab parking privileges through a performance-based allocation system administered by each Directorate. In addition, to give more people at JPL a chance to park on-Lab, a lottery will be held. Most JPL employees who do not have on-Lab parking will be eligible for a lottery that will provide 100 on-Lab parking spaces. The winners will have on-Lab parking for a specific workday each week for an entire year, thus netting 500 winners

Another way employees and contractors can qualify for on-Lab parking is through carpool and vanpool arrangements. Individuals interested in more information should contact the Rideshare Office at ext. 4-RIDE. Additionally, the Lab is looking into increasing the frequency of shuttle service and extending service hours during peak usage times.

Whenever parking is discussed, the question regularly raised is whether or not present parking capacity can be increased. JPL's Facilities Division is currently developing a Facilities Master Plan, which includes expanding parking capacity over the next 10 years. The plan should be completed by the end of the calendar year. As Facilities Division Manager Bruce Fischer said:

"Turning a plan into a physical reality requires funding for infrastructure development. This funding has been difficult to obtain over the past few years." For the foreseeable future, JPLers will need to manage within the existing, finite surface parking area currently available.

Employees who are affected by the upcoming changes in parking will be notified as part of annual salary review discussions. The new parking eligibility rules will take effect on Jan. 6. This implementation schedule was specifically selected in order to give those employees who are most affected by the changes in parking eligibility ample time to make necessary changes in their work schedule, or find a carpool.

The revised parking requirements will be available soon on JPL Rules! at <http://rules.jpl.nasa.gov>.



an individual had been given access. The new policy seeks to be a more equity-based approach aimed at providing on-Lab parking to individuals in some of the most important and complex positions. "Management recognizes that all JPL employees and affiliates make significant contributions to the Laboratory's goals, but with limited space, not everyone can park on-Lab," said Sue Henry, deputy director for Business Operations and Human Resources.

Under the new policy, employees classified in the positions of Fellow, Chief Scientist for a Directorate, Chief Technologist for a Directorate, Chief

for a 100-space lottery. Implementation details are being worked.

Who will no longer be eligible for on-Lab parking? Folks most often referred to as "grandfathered" employees. These JPLers at one time became eligible for on-Lab parking, but never had the drive-on privilege revoked even though they may no longer qualify. Interim Employment Program participants will no longer have on-Lab parking. Retirees will be asked to park in the visitor annex area. Also, the current system of on-Lab parking eligibility—such as expeditor, special project, special visitor, and medical passes—is currently under review.

ELIGIBLE FOR ON-LAB PARKING

- Fellow
- Chief Scientist for a Directorate
- Chief Technologist for a Directorate
- Administrator IV
- Most Senior A designations
- Managers I, II, and III
- Principals
- Employees with 25 years or more of continuous service
- Carpools
- Vanpools
- Lottery winners

INELIGIBLE FOR ON-LAB PARKING

- "Grandfathered" employees: JPLers who at one time became eligible for on-Lab parking, but never had the drive-on privilege revoked even though they may no longer qualify
- Former managers not presently classified to meet new criteria
- Division-level secretaries
- Interim Employment Program participants
- Retirees

New portal helps you surf JPL online

By Mark Whalen

DailyPlanet
online for the JPL community

Classified ads will be available the day before Universe is published, at <http://dailyplanet>

JPL's online news source

View this and previous issues of Universe online <http://universe.jpl.nasa.gov>

Universe

Editor

Mark Whalen

Design & Layout

Adriane Jach, Audrey Steffan/
Design Services

Chief Photographer

Bob Brown/Photo Lab

Advertising

Susan Braunheim-Kalogerakos

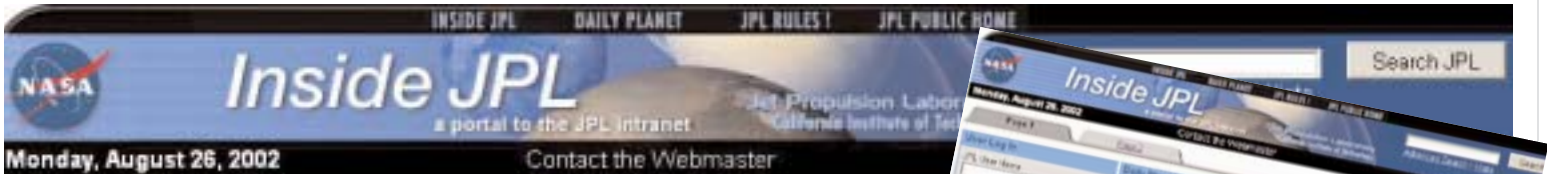
Universe is published every other Friday by the Office of Communications and Education of the Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109.

Notice to Advertisers

Advertising is available for JPL and Caltech employees, contractors and retirees and their families. No more than two ads of up to 60 words each will be published for each advertiser. Items may be combined within one submission. Ads must be submitted on ad cards, available at the JPL Store and the Universe office, Bldg. 186-118, or via e-mail to universe@jpl.nasa.gov.

Ads are due at 2 p.m. on the Monday after publication for the following issue.

All housing and vehicle advertisements require that the qualifying person(s) placing the ad be listed as an owner on the ownership documents.



Having trouble negotiating your way through JPL's myriad online resources? Help has arrived.

Inside JPL, the customizable portal to the JPL intranet, is now available to organize the online resources that match individual job requirements and personal preferences. Located at <http://insidejpl>, the new site can help JPL staff easily find everything from timekeeping to cafeteria menus, employee contact information to JPL Rules!

The portal acts as an "electronic gateway" that makes it easy for users to find and organize links and applications they use most often. Boxes within the portal's main page, called data channels, deliver dynamic information supplied by various "publishers" on Lab. Examples of data channels include the Daily Planet, New Business Systems, the JPL Library, and Labwide Announcements.

The JPL Web Space Directory is sure to be a key data channel for many users. The directory includes easy-to-find links for such areas as employee resources, missions and projects, institutional news and events, JPL organizations, and more. Significant JPL sites are represented within the directory in a streamlined organizational hierarchy that facilitates quick access to online data and applications.

In addition to browsing the directory, users seeking information will be able to search the JPL intranet with the new institutional search engine based on Google technology. The Google search engine can be used to search both internal JPL web space and external World Wide Web sites.

By entering the JPL user name and password, employees can customize

their portal page by selecting the data channels they would like to display.

They can also specify how they would like channels configured on the page, and can edit individual channels to add links. More details are found at the User Login data channel. For those who need help, use the online help manual in the portal or contact the development team by using the e-mail link on the top banner.

Inside JPL was developed by the JPL Knowledge Management Project as a next-generation replacement for the Electronic Labwide Information Access System (ELIAS) under the sponsorship of the Institutional Computing and Information Services (ICIS) Program. Sometime during fiscal year 2003, Inside JPL will replace ELIAS completely.

Jayne Dutra, a member of the JPL Knowledge Navigation Team, said future portal enhancements may include data channels specifically for directorates, divisions or projects, and supporting JPL teams in online collaboration activities.

For more information about Inside JPL or to set up a demo for your next group meeting, contact call Dutra at ext. 4-6948.

Retirees

The following JPL employees retired in September:

William Melbourne, 46 years, Section 330; Hershal Fitchugh, 45 years, Section 313; Rodney Stanley, 39 years, Section 216; Ronald Ploszaj, 36 years, Section 160; Patricia McLane, 35 years, Section 215; Elena Pestano, 31 years, Section 212; William Chitty, 30 years; Section 352; Steve Kuan, 28 years, Section 216; Carol McGowan-Hanewinkel, 26 years, Section 372; Donald Dunn, 24 years, Section 387; Stanley Packard, 22 years, Section 263; James Shmitka, 20 years, Section 357; Boyd Davis, 18 years, Section 214; Billie Ottenfeld, 18 years, Section 215; Ronald Heuerman, 17 years, Section 332; David Fort, 15 years; Laura Chin-Loy, 13 years; Section 244; Lynn Gref, 13 years, Section 810; Lillie Varnado, 10 years, Section 214.

Letters

I would like to thank my extended JPL family, especially Section 272, for your generosity and kind words during the recent passing of my mother. You have made it a little easier to get through a difficult time.

Denise Dean

Passings

PHILIP STANTON, 61, a retired engineer in Section 333, died of colon cancer Sept. 17.

Stanton joined JPL in 1977 and retired in 2000. He is survived by his mother, Alice; sisters Kathleen, Judy and Diana; and brothers Tony and Doug.

Services were held Sept. 23 at Holy Cross Cemetery in Culver City.

BARBARA ANDERSON, retired from the Lab's contract accounting group, died of a granular cell tumor Aug. 10. Anderson worked at the Lab from 1973-93.

Classifieds

For Sale

BATTERY BACKUP, for your PC/server, brand new American Power Conversion ES Series, model no. BE350U, \$28. 956-3745, Steve. BEDROOM SET, 6 pc., Italian imported, headboard, 2 nt. stands, 5-drawer chest, 9 drawer dresser & mirror, \$450. 323/256-0535, Lucia. BIKES: boy's, exc. cond. \$45; girl's, good cond. \$15; PLATES, 20-25 porcelain collector, \$50. 626/359-7666. BIKE SHORTS, ladies, Canari, medium, large, \$15/ea.; BIKE TOP, ladies, Danskin, red and

purple w/rear pockets, large \$10/ea., both worn once or twice. 897-1203. CEMETERY PLOTS, 5, at Rosehills, Garden of Autumn on developed land, willing to split up, valued at \$2,100/ea., sell for \$1,800. 909/986-4611, evenings.

CHAIR, recliner, motorized lift with heat & massage, remote controls, great for the elderly, like new, used only a few times, orig. cost \$1,000, sell for \$400. 909/971-0086.

COFFEE MAKERS, Krups 10-cups, white/gray, like new, \$40 obo; Braun 10-cups, white/black, like new, \$30 obo. 626/791-6101.

COMPUTER, Compaq P-400, with monitor, 128 MB RAM, 6.4 GB HD, new 56K modem, \$395. 951-0000, Nik.

COMPUTER DESK, ample storage and place for printer / CPU. 841-3551.

CRIB, portable Graco Pack & Carry, with sun canopy, exc. cond., \$65; DOG HOUSE, Igloo, large, \$45. 626/798-6248.

DESK, solid light cherry, 40 x 70 inches, six drawers, exc. cond., \$150. 626/458-5410.

DRYER, Kenmore, electric (requires 220v outlet), series 70 Super Capacity Plus, 3 years old, exc. cond., retails for \$400, sell for \$195. 626/301-0010.

GARDEN COMPOSTERS and EQUIPMENT: Biostack, Smith & Hawken, 28" x 40" x 28", \$40; Soil Saver, 28" x 28" x 28", \$30; both are black and have lids; hand mower, Great States, \$15, fertilizer/lawn seed spreader, Scotts, \$20. 626/303-3390, before 6 p.m. GENERATOR, Coleman 2250W portable 120V@18.75A, like new, less than 20 hours usage, \$200. 909/971-0086.

GUITAR, Takamine, acoustic G series, vg cond., strap but no case, \$75. 249-2420.

JEWELRY, diamonds: stud earrings, .89 ct., \$300; earring jackets, .24 ct., \$250; necklace, pendant, .25 ct., \$250; Lladro collector Christmas bells, 10 avail., \$15/ea. 626/798-2531.

LOVE SEAT, leather, claret in color, newly purchased from Robinsons-May, brand new in package, purchased for \$1,088.88 + tax, sell for \$850; RECLINER, fabric, dark green, 3 yrs, \$120; RECLINER, leather, black, 4 mo. old, from Best Buy from \$110 + tax, sell for \$65. 626/462-9597 or 626/298-1017.

MINI DISC PLAYER, with record capability, Sony, remote, 10 blank discs, great sound, tiny, mint cond., \$175/obo. 687-8627, Alberto. MONITOR, IBM or Compaq, 17", \$95. 951-0000, Nik.

OVEN/MICROWAVE COMBO, Thermador, 21 cu. ft., side-by-side refrig., GE, gas cooktop, Chambers, & ventilating hood; all in exc. cond.; being replaced by new appliances in a soon-to-be-remodeled kitchen; best offer. 248-9561.

PIANO, Yamaha upright in polished ebony, exc. cond., \$2,000. 626/303-1927.

PLAYHOUSE, complete w/kitchen, seats, & table, working door, perfect for 2-yr-old girls & up, perfect cond., \$100. 626/794-4921, Bert.

SCUBA EQUIPMENT: full wetsuit, step in jacket, men's XL, size 7, 180-200 lbs, suitable for diving in California, \$95; tank, alum., 80 cu. ft., never used, \$80; steel 95 cu. ft. at 2650 psi, \$95; steel 72s, \$60. tcfs@aprelx.com.

SURFBOARD, 7'1", Rusty Minigun, \$100; VCR, Panasonic, \$20; DVD, Philips \$100; BRIEF CASE, Zero-Halliburton, \$200; BED SHEETS, full sz., cotton, Ralph Lauren, \$20; PHONE, rotary, Pac Bell, white, \$10. 626/844-9228.

TREES: fish tail, 6' tall, \$80/obo; Ficus, braided, in 30" plastic pot >10' tall, \$250 obo; Ceramic bowl, gray, 2' diameter with planted geraniums, \$40 obo. 626/791-6101.

VACATION CLUB MEMBERSHIP, Silver Lakes, Calif. resort, up to 4 wks free golf each yr. at priv. PGA-rated course w/driving range/putting greens, 2-bd. condo for up to 6, 2 large lakes, many amenities, less than 2 hrs. from Pasadena, exchange rights w/3,000 resorts, reduced to sell due to illness, \$15,000. 805/967-7725.

WALKING JOINTER, for grooving joints in concrete slabs and walkways, 1/2" radius, with 6 ft. extension, new, \$45. 249-6071.

WASHER, Whirlpool, 2.5 cu. ft., 1 year old, like new, barely used, exc. cond., shipped by buyer, \$230. 323/8991688.

WASHER/DRYER, Kenmore, electric 220v dryer, 4 years old, great cond., extra large capacity, can deliver if close to Arcadia area, \$200/both. 626/582-8562, Eric.

WASHER/GAS DRYER, stacked, Kenmore, x-large capacity, white, used one year, over \$1,000 new, sell \$475. 626/836-4767.

Vehicles / Accessories

'89 ACURA Legend coupe, great cond., single owner, dark green w/gold trim, pwr. win/locks, sunroof, AM/FM cassette, 95K mi., \$6,250/obo. 626/355-5939.

'96 CHEVROLET Tahoe LT, 4WD, auto, tow pack, alloy wheels, leather, gold color, loaded, 95,000 mi., \$11,000. 626/332-2320.

'93 CHEVROLET Cavalier RS, convertible, red, auto, power windows/doors/locks, must sell, \$2,500/obo. 626/357-4849, Tony.

DIAGNOSTIC SCANNER, for domestic vehicles, from 1981-94, bi-directional capabilities, LED display, all cables and manual, exc. cond., \$275. 249-6071.

'68 FORD Mustang Classic Calif. Special GT/CS, hi-perf. 302 cid, 75K orig. mi., auto, fac. A/C, PS, AM radio, metallic gold paint, black interior, GT hood, trunk, fogs and wheels, no rust, turns heads, \$13,250/obo. 626/963-5727.

'97 HONDA Valkyrie motorcycle, exc. cond., very clean, many extra chrome parts, garage kept, low mileage, leather bags. 957-2852.

'94 HONDA Nighthawk 250cc, 2,500 mi., exc. cond., kept in garage, \$1,500. 562/693-1136.

'91 HONDA Civic DX, 5 spd. man., air, AM/FM stereo/cassette, org. paint/int., new tires, \$4,000/obo. 213/229-2980, Humaid.

'88 HONDA Accord LXi hatchback coupe, silver-gray with brown interior, a/c, pwr. windows/mirrors, AM/FM/cassette stereo, 5-spd, good cond. \$2,000. 661/299-4999.

'94 INFINITI J-30, orig. owner, recent major maintenance, inc. tune-up, new timing belts, new alternator, seals, water pump, trans. service, etc; full pwr., loaded w/ options, leather, sunroof, ABS, alarm, air, Bose AM/FM/CD/tape, 111K mi. \$8,500. 661/424-1420.

'91 INFINITI G-20, Sunroof, air, auto, cassette/stereo, \$2,100. 957-3675.

'95 MERCEDES-BENZ C280, exc. cond., automatic, ABS, a/c, power locks/windows/mirrors/ seats, AM/FM/cassette/CD, white, 54,000 mi., \$17,500/obo. 323/254-5685.

'94 NISSAN Quest XE minivan, gold, original owner, mint condition, 140K mi., V6 3.0 L engine, full maint. records, new tires, ABS brakes, full power, am/fm/cassette, automatic, towing package, tinted windows, alloy wheels, roof rack, \$6,000/obo. 248-2395.

'96 OLDSMOBILE Cutlass Supreme SL, 4 dr. sedan, white, 3.1L V6, auto, 95K, \$5,000. 626/798-5110, Rich or Priscilla.

'98 RANGE ROVER, 51K mi., extended full warr., grn., w/cream int., \$29,750. 626/798-2531.

'98 TOYOTA Camry LE, exc. cond., automatic, a/c, power locks/windows, sage, 1 yr. of warranty remaining, 63,000 mi., Blue Book value \$12,960. 626/797-6388.

'94 TOYOTA Camry LE, beige, automatic, 4-door, dual air bags, a/c, AM/FM/cassette, pwr. steering/locks/windows/mirrors, tilt wheel, cruise cont., exc. cond., one owner, very low mi. 47K, \$6,800. 468-6558.

'01 VOLKSWAGEN Beetle GLS, silver/black leatherette, 5 spd., pwr locks, windows, & mirrors, cruise, alloys, AM/FM cass., CD changer, fog lights, ABS, remote keyless entry, 11K mi., \$16K. 626/449-0997.

Wanted

ARTHRITIS PATIENTS, invited for free one-year, 6 visit Pasadena research clinical trial, age 50-plus, Marilyn. 626/403-6312, leave phone no., address for mailing.

HOUSING, Caltech grad, starting as a JPL postdoc in Oct., seeking a 2-bedroom apt. in Pasadena, preferably not too far from Caltech, or a small 2-bedroom house in the Pasadena area, unfurnished or furn. 626/296-3271.

SPACE INFORMATION/memorabilia from U.S. & other countries, past & present. 790-8523, Marc Rayman. VOLLEYBALL PLAYERS, coed, no beginners please, Tues. nights 8 to 10:00 at Eagle Rock High School, \$3/night. 956-1744, Barbara. WAREHOUSE, non-profit Foothill Unity Ctr. in Monrovia needs donated space from Nov. 1-Dec. 27, preferably in Monrovia/ Duarte/Arcadia area; will be used for storage/distribution of Thanksgiving food boxes, Xmas food boxes/ gifts collected from the community. 626/ 358-3486 or 626/797-1310, Betty McWilliams.

Free

CATS: gray tabby, female, found, 1 yr old, very sweet, spayed, not dog-friendly; rescued healthy male, 9 wks. old, fluffy gray Tabby, litter trained, very cute; mama kitty, 1 yr. old, short hair, gray Tabby, spayed, healthy, litter trained. 626/287-9433.

FIREWOOD, elm. 352-9288.

REFRIGERATOR, 17.1 cu. ft. top freezer, off-white color, works great, can deliver near Arcadia area. 626/582-8562, Eric.

RUBBLE ROCK, turned up from backyard in foothill area, several different sizes, you haul. 957-7623 or erik@hovland.org.

For Rent

ALTADENA, 1-bd. guesthouse, fenced yard, secure, clean quiet, washer/dryer, Florecita area, above E. lot, walk to JPL must like dogs, \$495 + 1/3 utilities, \$600 security deposit. 626/794-6076.

LA CANADA, private rm. in home, with private bath, off-st. parking, BBQ, pool, full kitchen priv., wash/dry, etc., \$450-util. 952-5430.

PASADENA, charming 2 bd., 1 ba., nr. Christmas Tree Lane, with large fenced lot, ideal for young JPL family, includes gardener, \$1,300. 210/647-7735 or 218/887-7735.

PASADENA, spacious 2 story condo, 3 bd., 2.5 ba., prestigious community, beaut. inter., bright ktch., prof. landscape, ctrl. air & heat, close to shop., cozy 1/2 w/FP, end unit, frml. d/r, hdwd. flrs., immac. cond., close to schls. \$1,750. 626/396-9024.

PASADENA, townhouse to share, will have own master bd. & office, very spacious, close to JPL and Old Town, \$600. 626/818-7455.

PASADENA apt., 1 bd., 1 ba., everything completely new, walking dist./PCC; stove, refrigerator & basic util. included, \$925. 590-2793.

Real Estate

N. MONROVIA home, quiet cul-de-sac, 4 blks. north of Foothill, 3 bd., 2.25 ba., lv. rm. w/ vaulted ceiling & skylights, fireplace, dining room + breakfast nook, master suite w/dressing area/vanity, plenty closet space, 1,615 sq. ft., central heat/air, 2-car attached garage, new roof, beautifully landscaped, priv. backyard, auto sprinklers, \$479K. 415-3814.

Vacation Rentals

BIG BEAR LAKEFRONT, luxury townhome, 2 decks, tennis, pool/spa, beautiful master bd. suite, sleeps 6. 949/786-6548.

CAMBRIA, ocean front house, sleeps up to 4, exc. view. 248-8853.

HAWAII, Kauai, 1 bd. condo w/full kitchen, on beach, tennis courts, pool, spa, nr. shopping, restaurants, 1 week (8 days 7 nights), \$550. 626/568-3215.

HAWAII, Kona, ocean front on Keauhou Bay, house / guest house comfortably sleep 6, 3 bd., 2 ba., rustic, relaxing & beautiful, swim-ming, snorkeling, fishing, spectat. view, near restaurants, golf & other attractions. 626/584-9632.

HAWAII, Maui condo, NW coast, ocean front view, 25 ft. fr. surf, 1 bd. w/loft, compl. furn. phone, color TV, VCR, microwave, d/w, pool, priv. lanai, slps 4, laundry fac., 4/15-12/14 \$105/nite/2, 12/15-4/14 \$120/nite/2, \$15/nite/ add'l person. 949/348-8047, jackandrandy@cox.net.

INCLINE VILLAGE timeshare, near Tahoe, large 2 bd., 2 ba., full-size condo. 909/986-4611, evenings.

MAMMOTH, Snowcreek, 2 bd., 2 ba., + loft, sleeps 6-8, fully equipped kitchen incl. microwave, D/W, cable TV, VCR, phone, balcony w/view to mtns., Jacuzzi, sauna, streams, fish-ponds, close to Mammoth Creek, JPL discount. 626/798-9222 or 626/794-0455.

OCEANSIDE condo, fully furn., 2 bd., 2 ba., fireplace, full kitch., quiet, relaxing, beautiful beachside setting; BBQ, pool, spa, game rm.; great ocean view, easy walk to pier & restaurants, sleeps 8, avail. weekly or monthly. 909/ 981-7492 or dfhaugc@yahoo.com, Darlene.

OCEANSIDE, on the sand, charming 1 bd. condo, panoramic view, walk to pier & harbor, pool/spa, game rm., sleeps 4. 949/786-6548.

ROSARITO BEACH condo, 2 bd., 2 ba., ocean view, pool, tennis, short walk to beach on priv. rd., 18-hole golf course 6 mi. away, priv. secure parking, 626/794-3906.